

**Amendments to the Claims:**

*This listing of claims will replace all prior versions, and listings, of claims in the application:*

Kindly cancel claims 1 - 8 without prejudice, in favor of new claims 9 - 21.

Claims 1 - 8. (Cancelled)

9. (NEW) A method for the biological decomposition of a material comprising a silicon-carbon single bond comprising incubating a mixture of the material and a microorganism population under anaerobic or microaerobic conditions with addition of an alternative electron acceptor.

10. (NEW) The method of claim 9, wherein at least one material comprising a silicon-carbon single bond is a polyorganosiloxane, an organofunctional siloxane, an organo-silanol, or a fragment thereof.

11. (NEW) The method of claim 9, wherein the alternative electron acceptor is selected from the group consisting of fumarate, succinate, oxidized iron ions, sulfate, or nitrate.

12. (NEW) The method of claim 9, wherein the anaerobic or microaerobic conditions are selected such that less than 5% of free or dissolved oxygen is present.

13. (NEW) The method of claim 12, wherein less than 1% of free or dissolved oxygen is present.

14. (NEW) The method of claim 12, wherein less than 250 ppm, of free or dissolved oxygen is present.

15. (NEW) The method of claim 9, wherein the alternative electron acceptor is present in a concentration of 0.1-100 mM.

16. (NEW) The method of claim 9, wherein incubating takes place at a temperature of 20 to 80°C.

17. (NEW) The method of claim 9, wherein incubating takes place at a temperature of 30 to 70°C.

18. (NEW) The method of claim 9, wherein incubating takes place at a temperature of 40 to 60°C.

19. (NEW) The method of claim 9, wherein incubating takes place over a period of 1 to 200 h.

20. (NEW) The method of claim 9, wherein incubating takes place over a period of 10 to 150 h.

21. (NEW) The method of claim 9, wherein incubating takes place over a period of 24 to 100 h.